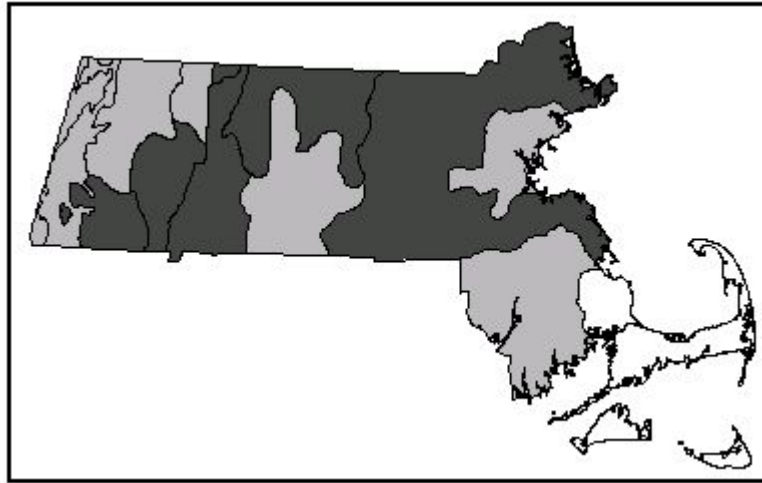


Community Name: HEMLOCK-HARDWOOD SWAMP
Community ELCODE: CP1A120000
SRANK: S4



Concept: Acidic forested swamps where hemlock is dominant or co-dominant in the canopy.

Environmental setting: Hemlock-hardwood swamps occur in poorly drained basins in bedrock and till throughout the state. The soil is muck and it is saturated throughout the year. Some groundwater seepage appears to be typical. At sites where mixed hemlock swamp and red maple swamp occur [1000 Acre Swamp in Athol and Phillipston], hemlock-dominated areas appear to occupy higher elevations. More information is needed to characterize the environmental setting and physical characteristics of hemlock-hardwood swamp forests.

Vegetation Description: Many swamps have hemlock (*Tsuga canadensis*) as a component of the canopy but "hemlock-hardwood swamps" are differentiated from others by having hemlock as the major canopy species. In some cases, hemlock forms dense stands. In other cases, probably more commonly, hemlock is associated with a mixture of white pine (*Pinus strobus*), red maple (*Acer rubrum*), and yellow birch (*Betula alleghaniensis*). The hemlock-dominated canopy allows little light into the subcanopy and shrub species are sparse, but shrubs can form dense thickets in canopy gaps. Typical shrubs include alders (*Alnus* spp.), highbush blueberry (*Vaccinium corymbosum*), winterberry (*Ilex verticillata*), and mountain holly (*Nemopanthus mucronatus*). The ground layer is hummocky and covered in various moss species. Ferns are common, especially cinnamon fern (*Osmunda cinnamomea*). Sensitive fern (*Onoclea sensibilis*) occurs less abundantly. Goldthread (*Coptis trifolia* ssp. *groenlandica*) is characteristic. In areas where hemlock is mixed with hardwoods, there appears to be higher species diversity: woodferns such as spinulose woodfern (*Dryopteris carthusiana*), intermediate woodfern (*D. intermedia*), and crested woodfern (*D. cristata*) can be abundant in the herbaceous layer. Rich variants of hemlock-hardwood swamps occur. One rich site located at the base of a steep forested slope in Huntington has a mixture of spice bush (*Lindera benzoin*), mountain-laurel (*Kalmia latifolia*), and hobble-bush (*Viburnum lantanoides*) in the shrub layer, and an herbaceous layer of more than 20 species, including jack-in-the-pulpit (*Arisaema triphyllum*), spotted touch-me-not (*Impatiens capensis*), Pennsylvania bittercress (*Cardamine pensylvanica*), cinnamon fern (*Osmunda cinnamomea*), interrupted fern (*O. claytoniana*), goldthread (*Coptis trifolia* ssp. *groenlandica*), and blue marsh-violet (*Viola cucullata*). Rich hemlock-hardwood swamps are differentiated from calcareous seepage swamps by their lower herbaceous species richness, about 20 species as compared to >40 for calcareous seepage swamps, and their lack of characteristic calciphiles (calcium-loving), such as delicate sedge (*Carex leptalea*), brome-like sedge (*Carex bromoides*), long-stalked sedge (*Carex pedunculata*), rough-leaved goldenrod (*Solidago patula*), and golden ragwort (*Senecio aureus*).

Associations: No associations have been described in Massachusetts.

Habitat values for Associated Fauna: Hemlock-hardwood swamps can function as vernal pool habitat if water remains standing for 2-3 months and they lack fish; these areas provide important amphibian breeding habitat.

Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries & Wildlife

Associated rare plants:

MALAXIS BRACHYPODA	WHITE ADDER'S-MOUTH	T
RIBES TRISTE	SWAMP RED CURRANT	- WL

Associated rare animals:

AMBYSTOMA JEFFERSONIANUM	JEFFERSON SALAMANDER	SC
AMBYSTOMA LATERALE	BLUE-SPOTTED SALAMANDER	SC
CLEMMYS GUTTATA	SPOTTED TURTLE	SC
CLEMMYS INSCULPTA	WOOD TURTLE	SC
HEMIDACTYLIUM SCUTATUM	FOUR-TOED SALAMANDER	SC

Examples with Public Access: Bear Swamp, DEM Representative Natural Areas, Beartown SF, Great Barrington; 1000 Acre Swamp, Athol/Phillipston ; Knightville Dam property, ACOE, Huntington/Chester.

Threats: More information is needed to determine the threats to hemlock-hardwood swamps.

Management needs: More information is needed to assess the management needs for hemlock-hardwood swamps.

Synonyms

USNVC/TNC: Tsuga canadensis/Sphagnum spp. forest [CEGL006226]

MA [old name]: not described, included within Northern New England basin swamp [CP2B2B0000]

ME: Not described.

VT: Hemlock swamp

NH: Hardwood-conifer seepage swamp-Tsuga canadensis/Taxus canadensis association

NY: Hemlock-hardwood swamp; Rich hemlock-hardwood peat swamp

CT: Tsuga canadensis seasonally flooded forest

RI: Hemlock-hardwood swamp

Golet & Larson, 1974: Evergreen wooded swamp [WS-2]

Other:

Author: J. Kearsley **Date:** 7/21/99